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**west virginia department of environmental protection**

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## **ENGINEERING EVALUATION / FACT SHEET**

### **BACKGROUND INFORMATION**

Application No.: R13-2334Z  
Plant ID No.: 029-00008  
Applicant: Ergon - West Virginia, Inc. (Ergon)  
Facility Name: Newell Refinery  
Location: Newell, Hancock County  
SIC/NAICS Codes: 2911/324110  
Application Type: Class II Administrative Update  
Received Date: July 29, 2016  
Engineer Assigned: Joe Kessler  
Fee Amount: \$300  
Date Received: August 3, 2016  
Complete Date: September 3, 2016  
Due Date: November 22, 2016  
Applicant's Ad Date: September 16, 2016  
Newspaper: *The Weirton Daily Times*  
UTM's: 531.0 km Easting • 4,495.1 km Northing • Zone 17  
Latitude/Longitude: 40.609173/-80.629196  
Description: Revisions to requirements relating to the Main and Sour Gas Flares.

The Newell Refinery was originally constructed in 1972 by Quaker State and the facility was purchased by Ergon in 1995. On May 17, 2000, Permit Number R13-2334 was issued to Ergon that superceded and replaced all previous permits covering the facility. All portions of the facility are permitted under the current permit (R13-2334Y) and no sections of the facility are grandfathered.

### **DESCRIPTION OF PROCESS/MODIFICATION**

#### ***Existing Facility***

The Newell Refinery processes crude oil into fuels and other industrial chemical feedstocks through the use of distillation and chemical reaction processes. The existing facility has a capacity of 803,000 barrels/month.

### ***Proposed Modifications***

Ergon has now submitted a permit application to make the following modifications to the draft permit (note that no physical changes are proposed for the facility):

- Requesting to remove the 250 hours per year flaring limit from the Main/Sour Gas Flare (F1). This request is being made to bring the facility in line with EPA guidance, which limits flaring to only emergency situations - situations which would not be required to be included in the facility's potential-to-emit (PTE);
- Requesting to break the combined emission unit of the Main/Sour Gas Flare (F1) into separate emission units (as is reflected by the actual physical set up of the two flares): the Main Flare (F1) and the Sour Gas Flare (F2). This will better allow Ergon to comply with the conflicting applicability of 40 CFR 60, Subpart Ja (Main Flare) and the Subpart J (Sour Gas Flare). As the Main Flare does utilize a continuous pilot light, it will be associated with a small amount of emissions; and
- Requesting many other small changes to the permit to correct references to no longer active Consent Orders, update emission unit identifications and descriptions, correct incorrect or obsolete rule citations, and other miscellaneous administrative changes to the permit.

### **SITE INSPECTION**

Due to the nature of the modification, the writer did not conduct a site inspection for this permitting action. According to information in the DAQ database, the last full on-site inspection occurred on September 16, 2016 by Ms. Becky Johnson of the Compliance/Enforcement Section. This inspection found the facility be "Status 30 - In Compliance."

### **AIR EMISSIONS AND CALCULATION METHODOLOGIES**

The only change in emissions resulting from the proposed changes evaluated herein is the reduction in emissions due to the removing from the facility-wide PTE emissions associated with the 250 hours of non-emergency flaring that will no longer be authorized in the draft permit. Therefore, the decrease in emissions is calculated by comparing the currently permitted emission limits for the Main/Sour Gas Flares with the proposed limits that just include the pilot light emissions from each flare. This comparison is presented in Table 1 below.

Note that the existing flare limits were based on 250 hours of off/waste-gas flaring that is no longer allowed under EPA guidance. As flaring is only authorized during emergency situations, which are covered under Section 2.12 of the draft permit, these emissions will no longer be included in the facility-wide PTE of the Newell Refinery. Additionally, the pilot light emissions were based on the emission factors provided for natural gas combustion as given in AP-42 Section 1.4 (AP-42 is a database of emission factors maintained by USEPA).

**Table 2: Emission Changes Due to Reduced Flaring PTE**

Pollutant	Existing Combo Flare Limits		New F1 Pilot		New F2 Pilot		Reduction	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
CO	189.28	23.66	0.02	0.07	0.03	0.15	-189.23	-23.43
NO <sub>x</sub>	35.36	4.42	0.02	0.09	0.04	0.13	-35.31	-4.20
PM <sub>2.5</sub> /PM <sub>10</sub> /PM	3.84	0.48	0.002	0.007	0.003	0.012	-3.84	-0.46
SO <sub>2</sub>	320.88	40.11	~0.00	~0.00	~0.00	~0.00	-320.88	-40.11
VOCs	71.44	8.93	0.001	0.005	0.002	0.008	-71.44	-8.92

The change in annual facility-wide PTE as a result of the modifications evaluated herein is given in the following table:

**Table 2: Change In Facility-Wide Annual PTE**

Pollutant	R13-2334Y <sup>(1)</sup>	R13-2334Z	Change
	tons/year	tons/year	tons/year
CO	250.31	226.88	-23.43
NO <sub>x</sub>	204.65	200.45	-4.20
PM <sub>2.5</sub> /PM <sub>10</sub> /PM	24.21	23.75	-0.46
SO <sub>2</sub>	79.19	39.08	-40.11
VOCs	135.87	126.95	-8.92
HAPs	22.07	22.07	0.00

(1) Emissions taken from R13-2334Y Fact Sheet.

## **REGULATORY APPLICABILITY**

The following will discuss only the regulatory applicability of general rules and specific rules to the emission units that have been proposed to be modified as part of this permitting action.

### ***45CSR13: Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation***

The proposed changes at the Newell Refinery do not have the potential to increase the emissions of a regulated pollutant. Therefore, the proposed changes would normally be eligible to be reviewed as a Class I Administrative Update. However, Ergon voluntarily submitted the application as a Class II Administrative Update (due to concerns over federal enforceability) and it was reviewed as such. Pursuant to §45-13-4.1, “[u]pon the request of the permittee, or with the permittee's consent, the Secretary may revise or update a valid existing permit or general permit

registration issued pursuant to this rule as necessary to incorporate any administrative update identified in subsection 4.2.” Ergon does meet the eligibility requirements under §45-13-4.2(b) for review of the changes under a Class II Administrative Update.

As required under §45-13-8.3 (“Notice Level A”), Ergon placed a Class I legal advertisement in a “newspaper of *general circulation* in the area where the source is . . . located.” The ad ran on September 16, 2016 in *The Weirton Daily Times* and the affidavit of publication for this legal advertisement was submitted on September 23, 2015.

#### ***45CSR14: Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration - (NON APPLICABILITY)***

The Newell Refinery is located in Hancock County, WV. Hancock County is classified as “in attainment” with all National Ambient Air Quality Standards. However, as the facility is a “listed source” under §45-14-2.43 (“Petroleum Refineries”), the individual major source applicability threshold for all pollutants is 100 TPY. As shown in Table 2, the existing facility-wide PTE of the Newell Refinery is greater than 100 TPY for CO, NO<sub>x</sub>, and VOCs. Therefore, the existing facility is defined as a “major stationary source” under 45CSR14. However, the modifications evaluated herein are not defined as a “physical change” or a “change in the method of operation” that would be subject to a Prevention of Significant Deterioration (PSD) Applicability Analysis.

#### ***45CSR30: Requirements for Operating Permits***

45CSR30 provides for the establishment of a comprehensive air quality permitting system consistent with the requirements of Title V of the Clean Air Act. The Newell Refinery, defined under Title V as a “major source,” was last issued a Title V renewal permit on August 18, 2015 (R30-02900008-2015). Proposed changes evaluated herein must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.

### **TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS**

This section provides an analysis for those regulated pollutants that may be emitted from the modified Monroe Compressor Station and that are not classified as “criteria pollutants.” Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NO<sub>x</sub>), Ozone, Particulate Matter (PM), Particulate Matter less than 10 microns (PM<sub>10</sub>), Particulate Matter less than 2.5 microns (PM<sub>2.5</sub>), and Sulfur Dioxide (SO<sub>2</sub>). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect the public health and welfare. Other pollutants of concern, although designated as non-criteria and without national concentration standards, are regulated through various federal and programs designed to limit their emissions and public exposure. These programs include federal source-specific Hazardous Air Pollutants (HAPs) limits promulgated under 40 CFR 61 (NESHAPS) and 40 CFR 63 (MACT). Any potential applicability to these programs for the modified sources were discussed above under REGULATORY APPLICABILITY. Ergon did not identify any change in the emissions of non-criteria regulated pollutants as part of this permitting action.

## **AIR QUALITY IMPACT ANALYSIS**

The estimated maximum increase in emissions are less than applicability thresholds that would define the proposed modification as “major” under 45CSR14 and, therefore, no air quality impacts modeling analysis was required. Additionally, based on the nature of the modification and the location of the source, an air quality impacts modeling analysis was not required under 45CSR13, Section 7.

## **MONITORING, COMPLIANCE DEMONSTRATIONS, REPORTING, AND RECORDING OF OPERATIONS**

No substantive change to the monitoring, compliance demonstration, reporting, and record-keeping requirements (MRR) in the draft permit was made. Where applicable, however, it was clarified that the Main Flare (F1) is subject to the requirements of 40 CFR 60, Subpart J and the Sour Gas Flare is subject to the requirements of Subpart J.

## **PERFORMANCE TESTING OF OPERATIONS**

There was no change in the existing performance testing requirements. Where applicable, however, it was clarified that the Main Flare (F1) is subject to the requirements of 40 CFR 60, Subpart J and the Sour Gas Flare is subject to the requirements of Subpart J.

## **CHANGES TO PERMIT R13-2334Y**

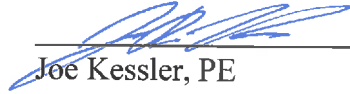
The substantive changes made changes to R13-2334Y were limited to:

- Emission Units Table 1.0 of the draft permit was modified to have separate rows for the Main Flare (F1) and the Sour Gas Flare (F2);
- The requirements for the Main and Sour Gas Flares (F1 and F2) were separated where appropriate under Section 5 of the permit;
- Where applicable in the permit, it was clarified that the Main Flare (F1) is subject to the requirements of 40 CFR 60, Subpart J and the Sour Gas Flare is subject to the requirements of Subpart J; and
- All references to the Consent Decree Civil No. 3.03CV114010S have been removed from the permit

In addition, other small changes and corrections were made throughout the permit too numerous to list here. See the permit application for a list of these changes.

## RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that compliance with all applicable state and federal air quality regulations will be achieved. Therefore, I recommend to the Director the issuance of a Permit Number R13-2334Z to Ergon - West Virginia, Inc. for the proposed changes evaluated above of the Newell Refinery located in Newell, Hancock County, WV.

  
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Joe Kessler, PE  
Engineer

  
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Date